APPLICATION FILING REQUIREMENTS FOR WIND ENERGY PROJECTS IN WISCONSIN

Version 5A
February 2012

Public Service Commission of Wisconsin
Wisconsin Department of Natural Resources
Department of Agriculture, Trade, and Consumer Protection
Department of Transportation

APPLICATION FILING REQUIREMENTS FOR CONSTRUCTION OF WIND FARM PROJECTS

Version 5A February 2012

General Instructions

Participating State Agencies:

This Application Filing Requirement (AFR) [1] applies to all wind energy power plant projects that require either a Certificate of Authority (CA) under Wis. Stat. § 196.49 or a Certificate of Public Convenience and Necessity (CPCN) under Wis. Stat. § 196.491 from the Public Service Commission of Wisconsin (PSCW). It applies to all public utility wind energy projects and any non-utility wind energy project rated at 100MW or greater.

The application resulting from the completion of the AFR will be used by the PSCW and Department of Natural Resources (DNR) in the preparation of either an Environmental Impact Statement (EIS) or an Environmental Assessment (EA). This AFR also includes filing requirements for a variety of DNR permits. In addition, the Department of Agriculture, Trade, and Consumer Protection (DATCP) will use the responses to this AFR in preparing an Agricultural Impact Statement (AIS), should one be required.

Pre-application Consultation Process:

Pre-application consultation is required by law under Wis. Stat. § 30.025 (1m). The purpose of pre-application consultation is to help applicants refine the project application, and facilitate efficient regulatory review. Applicants should schedule pre-application consultation meetings with agency staffs well in advance of filing an application with the PSC. Consultation is also strongly recommended for projects not subject to permits under Wis. Stat. § 30.025. The filing requirements in this document will apply to most wind energy generation construction projects. However, the state recognizes that all projects are not alike and that the information needed for one project may not necessarily be appropriate for another. For this reason pre-application consultation with the agencies is extremely important. Early in the consultation process, agency staff will identify staff contacts, clarify which information requirements apply to the specific project application, and explain important elements of the state's review process.

Other Required Facilities:

The operation of a new wind powered generation plant will also require construction of ancillary facilities such as overhead and/or underground collector circuits, new substations, interconnections to the existing distribution or transmission grid, O&M buildings, access roads, and materials handling facilities. During the pre-application consultation phase, all ancillary facilities required for the project to operate at full capacity must be identified. At that time

[1] The completion this AFR is required in order for the Commission to meet its obligations under Wis. Stat. §§ 1.11, 1.12, 30.025, 182.017, 196.025, 196.377, 196.49, and 196.491 and Wis. Admin. Code chs. PSC 4, 111, and 112.

PSCW and DNR staff will assist the applicant in determining what information on ancillary facilities will be required for a complete power plant application. Because the Commission must review and take final action on a CPCN application within 180 days of finding an application complete, it is critical that the applicant clearly understands what information will be necessary for the review of the project. Under existing statutes, the Commission can request, from the Circuit Court, a 180-day extension to the review period. All the information required for a complete application will be identified during the pre-application consultation process.

Biological Surveys:

Plant and/or animal surveys may be required for wind energy projects. The need for surveys will depend on the potential for impact to important natural resources that include, but are not limited to, high quality natural habitats and rare plant or animal populations.

Because there is a concern about the potential for bird and bat displacement and mortality, pre-construction bird and/or bat surveys may also be required for a project. Consultation with the DNR regarding pre-construction bird and bat surveys should be completed well in advance of submitting a construction application to the Commission. Applicants should consult with the DNR early in the project development and site selection process and before designing any surveys. Pre-application consultation allows the DNR to do a project-area screening to determine the need for and scope of surveys.

Pre-application consultations with the DNR for the purposes of determining the need for biological surveys is a prerequisite for a complete construction case application with the PSCW. Applicants should contact the DNR Office of Energy http://dnr.wi.gov/org/es/science/energy/ to arrange for a consultation and determination of survey need and scope.

If pre-construction avian and/or bat surveys are required by the DNR, then at a minimum, three seasons (spring, summer, and fall) of data collection must be conducted prior to submitting an application. A complete, three-season, study report must be filed with the Commission as part of the application. Study reports must be designed and formatted according to DNR and PSC specifications.

Application Completeness:

The regulatory review process for CPCN projects starts when the state receives a complete application. PSCW and DNR staff will examine the application during the 30-day completeness review period required under Wis. Stats. §196.491(3)(a)(2). The PSCW will notify applicants by letter whether an application is or is not complete. For incomplete applications, the letter will provide a list of information items that must be provided in order to have a complete application.

In practice, most applications require significant modification before they can be determined complete. For incomplete applications, applicants will be required to provide additional information and/or analyses, as outlined in the determination of completeness letter. In cases where serious incompleteness issues exist, separate responses to incompleteness items can result

in a confusing array of application documents that contain both modified and outdated information, often created under separate covers and organized in a variety of formats. In cases where incompleteness responses are numerous, applicants will be required to resubmit their applications after fully integrating all responses to staff's completeness questions. This is necessary in order to provide complete, accurate, and well organized applications for PSCW and DNR staff, the PSCW Commissioners, and the public. Subsequent 30-day completeness review periods will begin after the responses to all completeness items are received.

The PSCW must review and take final action on complete applications within 180 days of the date the application is judged complete. The PSC may petition the Circuit Court for an additional 180 days for project review and decision making.

Applicants should be aware that complete applications rarely answer all the questions that the state agencies must address. It is likely that applicants will be asked to provide additional information and data to the state. These information and data needs are often critical to agency review and the decision making process. Applicants must respond to all staff inquiries made subsequent to a determination of completeness in a timely, complete, and accurate manner.

DOT Permits and Reviews:

Wisconsin DOT OSOW (Oversize and Overweight) permits will be required for transporting wind turbine components to turbine construction sites. In addition, a review for high structure permits issued by the DOT's Bureau of Aeronautics may also be required (See Section 8.6). It is important for applicants to contact the Wisconsin DOT at an early stage in project development and before submitting an application to the PSC. For information on how to coordinate permitting efforts with DOT contact Dennis Leong, (608) 266-9910, email: dennis.leong@dot.wi.us or Ethan Johnson, (608) 261-6292, email: ethan.johnson@dot.wi.us.

DNR Permits and Reviews:

DNR construction site erosion control and storm water management plans, wetland and waterway permits, and incidental take permits for endangered species may be required for a project. Depending on the location of the project and ancillary facilities being proposed, other DNR permits and approvals may be required. These may include permissions and easements to place facilities on state-owned lands under DNR management.

The results of an endangered resources (ER) review, based on a search of the Natural Heritage Inventory database (NHI) and input from DNR biologists, is required for project applications (See Section 5.9). For instructions on how to request an ER review refer to the following DNR website http://www.dnr.state.wi.us/org/es/science/energy/ER or contact the DNR conservation biologist, Shari Koslowsky at 608/261-4382 or by e-mail shari.koslowsky@wisconsin.gov. All ER review materials and reports are CONFIDENTIAL and may not be distributed to the general public. An application's ER review and all supporting materials should be filed as a confidential document under the PSC ERF system (see Page 5).

By following Application Filing Requirements (AFR) and by participating in the pre-filing collaborative process the application will provide most of the information required to issue DNR permits. It is important to understand that even though an application is deemed complete for CPCN or CA purposes, additional information and modifications to project plans may be needed in order to complete the review process.

Independent Power Producers (IPPs) and Utilities:

In several sections of this AFR, IPPs proposing merchant plants and utilities are treated differently because of differences in the PSCW's statutory authority. In those sections, such as Section 1.3, items that pertain only to utilities or to both utilities and IPPs are marked. In all other sections of this AFR where differences in treatment are not noted those sections apply to BOTH utilities and IPPs.

Electronic Filing System (ERF):

CPCN and CA applications must be filed electronically using the PSCW's Electronic Regulatory Filing (ERF) system. At least 60 days prior to submitting an application to the PSCW, an engineering plan, as required under Wis. Stat. §196.491(3)(a)(3), must be filed with the DNR. Do not file a copy of the engineering plan using ERF. Instead file a letter on the ERF system confirming that the engineering plan has been filed with the DNR. Include the date the engineering plan was filed.

Instructions for filing under the ERF can be found at the following web site. Procedures for filing confidential documents can be found on page 10 of the ERF System User Manual.

ERF - Documents

Applicants must also provide PSCW and DNR staff with an electronic copy of the application in the latest version of Microsoft Word. If tables have been created using a spreadsheet, then applicants must also provide digital copies of those spreadsheets in Microsoft Excel format. In addition, provide a copy of the application and supporting maps and diagrams on CD or DVD, with the documents in *.PDF format. Copies of this CD/DVD will be provided to members of the public upon request. The files on the CD/DVD should be well organized, such that a person not familiar with PSCW filings can easily locate desired information.

Paper copies of the entire CPCN application must be received by the Commission before the state's 30-day completeness review period begins. Provide 25 copies[2] of the CPCN application for Commission use, three copies to the DNR's Office of Energy, plus one copy for each clerk and library as required by Wis. Stats. § 196.491(3)(a)1.

[2] Twenty-five copies are required in large part because the Commissioner's Office (CO) and the Office of General Council (OGC) must receive copies of the application in addition to project staff. Multiple copies of the application are needed in the CO since each Commissioner and Executive Assistant must be supplied with paper copies of the application. In addition, the OGC typically requires a copy for the General Council and one each for the attorneys assigned to the case. Members of the division's Core Management Team must also receive copies.

Paper and digital copies of CA applications are also required. Applicants should contact the PSC case coordinator assigned to the project to verify the number of paper copies required for PSC use.

Applicants must also provide three copies of CPCN or CA applications to the DNR Office of Energy.

The Department of Agriculture, Trade, and Consumer Protection (DATCP) will require one paper and one digital copy of any application as well as a digital copy of all GIS data submitted to the PSCW for the project. Submit copies of the application to DATCP, Ag Impact Program, Ag Resource Management Division (PO Box 8911, 2811 Agriculture Drive Madison, WI 53708).

In addition to paper copies of the application, paper and digital copies of all maps, engineering diagrams, facility layouts, and aerial photographs must also be provided to PSCW and DNR staff. Questions about the number and format of maps, photos, and diagrams can be answered during the pre-application consultation meetings or by contacting the PSC case coordinator.

Reduction of Paper:

Applicants are required to minimize the physical size of their applications by eliminating superfluous information and bulk information not material to the case. The following examples should be used as a guide:

- When submitting required information such as local ordinances, land use plans or other local and county planning documents only submit those pages relevant to the information requirement, i.e. pages specific to land use controls, safety, or noise. If PSC staff is interested in having the entire document for context, staff will request the applicant to file one copy under a separate cover.

- Minimize duplicative information. For example, if certain information, such as a Developer's Agreement, is applicable to more than one section of the CPCN application, include the entire document as an Appendix and reference it in the application text.

- When submitting correspondence between the applicant and state, local, and federal government permitting, planning, and land management agencies, submit only copies of "official" correspondence, i.e. letters from the applicant to an agency and the agency response to the applicant. PSC staff needs to review this correspondence to verify that the applicant has applied for the necessary permits and to ascertain the status of the permit review. Do not include unofficial minutes of meetings or records of telephone conversations between the applicant/applicant's consultant and permitting agencies as these documents represent hearsay and are not considered factual information.

- Submit applications on double-sided printed pages. This includes the text of the application as well as copies of supporting documentation submitted in the application. Exceptions to this requirement are large maps and figures (sized larger than 81/2 x 11 inches).

Digital Submissions and Formats:

- In addition to hard (paper) copies of the text portion of the application, submit a digital copy, using the most recent version of Microsoft Word, on a CD or DVD.
- For tables derived from a spreadsheet, provide a digital copy of the spreadsheet in Microsoft Excel format.

Maps and Drawings (See Section 4.0)

- A hard (paper) copy of all maps and drawings is required. In addition, all maps and drawings must be submitted using the digital formats listed below.
    - Digital GIS map formats:
        - Provide map files in *.mxd (ESRI ArcGIS 10) format for all GIS maps in the application.
        - Provide published map files in *.pmf format for all GIS maps in the application packaged with the data required for those files to function with ArcReader.
        - Provide pdf copies of all maps.
- CAD may be used for scale drawings of proposed substation facilities, for example, AutoCad *.dwg format or *.dxf format is acceptable (check with PSC staff for the appropriate AutoCAD release). The preference is *.dwg.

- Geographic Information Systems (GIS) data files must be submitted in Shapefile format (ESRI ArcGIS 9x). All GIS data submitted must be projected to Wisconsin Transverse Mercator (WTM), a projection system unique to Wisconsin and used by Wisconsin state agencies. The WTM uses North American Datum 1983 HARN. The projection parameters for WTM are:

Projection	Transverse Mercator
Spheroid	GRS80
Scale Factor at Central Meridian	0.9996
Longitude of Central Meridian	90° W (-90°)
Latitude of Origin	0°
False Easting	520,000
False Northing	-4,480,000
Unit	meter

- Photographic renderings of proposed facilities on the existing landscape must be submitted in a high-resolution uncompressed *.tif format (preferred) or high-resolution *.jpg format.
- Digital versions of aerial photographic images of the existing landscape at the proposed plant site/sites MUST be suitable for use on the PSC's GIS platform. DO NOT obscure any portion of the aerial photographic images provided in the application. Digital aerial photographic images must be properly georeferenced. All digital aerial photographic images MUST be accompanied by the geographic coordinate and projection system to which they have been georeferenced.
- Scanned maps and diagrams which cannot be submitted in any other format must be submitted in *.gif format at a depth of 256 colors or less.
- When providing maps, note facility locations but do not obscure map details.

Direct questions concerning these information requirements to Dan Sage of the PSC staff, at (608) 267-9486, e-mail Dan Sage@wisconsin.gov.

Application Filing Requirements (AFR) for Construction of a Wind Powered Electric Generation Facility Requiring either a CPCN or CA

Any generation facility of 100 MW or greater requires an application for a Certificate of Public Convenience and Necessity (CPCN). A complete CPCN application will contain the information listed in this document. Exceptions will be documented during the pre-application consultation process. Information that an applicant believes does not apply to the proposed project may not be omitted without a showing as to why the information is not applicable. Applications must follow the organization and format of this AFR.

A Certificate of Authority (CA) will be required for any Wisconsin utility proposing to build a generation facility rated at less than 100 MW, where the cost exceeds the thresholds established in Wis. Admin. Code § PSC 112.05(3). These filing requirements also apply to CA projects. Consult with Commission staff prior to submitting an application.

PROJECT AREA AND TURBINE SITE ALTERNATIVES

Under Wis. Stat. §§ 1.11, 196.025(2m)(c), and 196.491(3), and Wis. Admin. Code ch. PSC 4, the Commission decision for all CPCN and CA projects must include an evaluation of alternatives. These alternatives include:

1. Alternate project areas. For this analysis the application must describe the method and factors used to evaluate and eliminate competing project areas and why the proposed project site is the best possible option.

2. Alternate turbine sites. The applicant must provide alternate turbine sites for the Commission to consider. Alternate turbine sites must be viable and true alternatives to proposed sites. As a standard, an application should have a total number of viable turbine sites that is at least 25% greater than the minimum number of sites needed to achieve the rated output of the project. For example, for a 120 MW wind turbine project using 2 MW turbines, the application must identify and fully describe 75 turbine sites (60 sites + 15 alternate sites).

In addition, for utility projects requiring a CPCN an additional evaluation of alternate methods of supply is also required.

- Alternate methods of supply. Describe the alternate methods of supply considered in the course of developing the proposed project including a no-build option. Alternate forms of supply can include other forms of renewable energy such as solar, biomass, fuel cells etc. For a utility project, an alternative source of supply could also be a purchase power contract. This requirement that alternate methods of supply must be described does not apply to a CPCN application for a wholesale merchant plant, as defined in Wis. Stat. § 196.491(1)(w).

It is not acceptable to break a single project into two or more smaller projects in order to avoid the regulatory review process under Wis. Stat. § 196.491 (3) or to avoid the regulatory review process under Wis. Stat. §196.49 (Wis. Admin. Code § PSC 112.)

1.0 PROJECT DESCRIPTION AND OVERVIEW

1.1 General Project Location and Description of Project and Project Area

(The overall size of the project area will have an impact on the amount of data and analyses required in this AFR. It is recommended that the project area be optimized so that the project retains flexibility for siting turbines while at the same time reducing the total area for which data will be required.)

1.1.1. Provide the following information about the project:

1.1.1.1. Project Location - counties and townships in the project area.

1.1.1.2. Size of project area in acres.

1.1.1.3. Size (rated capacity), in megawatts, of the proposed project. *(If an actual turbine model is not yet under contract, the applicant must provide information on at least two turbine models that are being considered. Those turbines must represent the maximum and minimum megawatt size under consideration for purchase for the project.)*

1.1.1.4. Number of turbine sites proposed for the project and the number of alternate turbine sites that have been identified (See the discussion on page 9 regarding alternatives)

1.1.2. Provide a general map showing the location of the project area, nearest communities, townships, and major roads. Include an inset map showing where the project is located in the state. Scale should be appropriate for showing communities within at least 10 miles of the project area boundary.

1.2 Ownership

Identify the corporate entity or entities that would own and/or operate the plant.

1.3 Project Need/Purpose

IPPs (merchant plants) skip to Subsection 1.3.6

Subsections 1.3.1 thru 1.3.5 apply to utilities only. These subsections focus on compliance with Wis. Stat. § 196.374 Renewable Portfolio Standard (RPS). :

1.3.1. The utility's renewable baseline percentage and baseline requirement for 2001-2003 and the amount of renewables needed in the future.

1.3.2. Amount of renewable energy currently owned and operated by the utility as defined by the RPS requirements for additional renewable energy.
- 1.3.2.1. Total existing renewable generation capacity.
- 1.3.2.2. Total energy produced by renewable assets in previous calendar year separated by generation type (Hydro, biomass, methane, wind etc.).
- 1.3.2.3. Amount of renewable energy acquired through purchase power agreements (separated by type (hydro, biomass, wind etc.).
- 1.3.2.4. Amount of RPC credits purchased.

1.3.3. ***Utilities Only -*** Expected annual energy output for the project.

1.3.4. ***Utilities Only -*** **Other Need Not Covered in Section 1.3.1**
- 1.3.4.1. Monthly demand and energy forecast for peak and off peak periods over the next 20-25 years.
- 1.3.4.2. Describe how the availability of purchase power was analyzed.
- 1.3.4.3. Identify plant retirements forecast over the next 20-25 years.
- 1.3.4.4. Describe how the existing and expected applications for generation from Independent Power Producers (IPPs) have been factored into your forecast.
- 1.3.4.5. Describe how the proposed project meets the requirements the Energy Priorities Law, Wis. Stats. §§ 1.12 and 196.025(1).
- 1.3.4.6. Briefly describe utility's compliance under Wis. Stat. § 196.374 for energy efficiency.

1.3.5. ***Utilities Only -*** **EGEAS Modeling**
- 1.3.5.1. Describe the 25-year optimal generation expansion plan for all of the entities that are part of the generation plan.
- 1.3.5.2. The EGEAS modeling should include a 30-year extension period.
- 1.3.5.3. The wind resource should be modeled as non-dispatchable, using an hourly wind profile.

1.3.6. ***IPPs Only –*** **Energy Agreements**
- 1.3.6.1. Identify all Wisconsin utilities under contract for delivery of energy from the proposed project.
- 1.3.6.2. For each utility under contract or with which an agreement in principle for delivery of energy is in place provide the following, by utility:
  - 1.3.6.2.1. Rated capacity under contract.
  - 1.3.6.2.2. Annual energy to be delivered under contract or expected to be delivered.

1.4 Alternatives

1.4.1. ***Utilities (CPCN) -*** **Supply Alternatives**: Describe the supply alternatives to this proposal that were considered (including a "no-build" option) and present the justification for the choice of the proposed option(s).

1.4.1.1. Describe any alternate renewable fuel options considered and why those options were not selected.
1.4.1.1.1. Solar
1.4.1.1.2. Biomass
1.4.1.1.3. Hydro
1.4.1.1.4. Landfill Gas
1.4.1.1.5. Fuel Cell
1.4.1.2. Describe Purchase Power Agreements (PPAs) considered or explain why a PPA was not considered for this project.
1.4.1.3. No-Build Option.

1.4.2. ***Utilities (CPCN OR CA) and IPPs (CPCN)-*** **Project Area Selection**
1.4.2.1. Alternative Project Areas - Describe the project area screening and selection process used to select the proposed project area. Provide the following:
1.4.2.1.1. List individual factors or site characteristics used in project area selection.
1.4.2.1.2. Explain how individual factors and project area characteristics were weighted for your analysis and why specific weights were chosen.
1.4.2.1.3. Provide a list of all project areas reviewed with weighted scores for each siting factor or characteristic used in the analysis.
1.4.2.2. Provide a narrative describing why the proposed project area was chosen.

1.5 *Utilities (CPCN OR CA) and IPPs (CPCN) -* Turbine Site Selection

1.5.1. List the individual factors or characteristics used to select the proposed and alternate turbine sites.

1.5.2. Provide information on how turbine site characteristics and the type/s of turbines chosen factored into the selection of final turbine sites.

1.5.3. Turbine setback distances

1.5.3.1. Minimum setback from:
1.5.3.1.1. residences
1.5.3.1.2. property lines.
1.5.3.1.3. other buildings (e.g. animal barns, storage sheds).
1.5.3.1.4. roads.
1.5.3.2. Identify any sites where setback waivers are needed or have been executed.
1.5.3.3. Status of easement agreements:
1.5.3.3.1. Identify all turbine sites, proposed and alternate, for which an easement agreement has been signed.

1.5.3.3.2. Identify turbine sites where easement agreements have not been signed and provide a short description of the status of negotiations.

1.6 *Utilities Only -* Cost

1.6.1. Provide capital cost of the completed facility organized by Plant Account Codes (PAC) found in the PSC's Uniform System of Accounts for Private Electric Utilities – 1/1/90. Provide a breakdown within each PAC and a subtotal. Include, at least, the following PACs:
- 1.6.1.1. PAC 340 –Land and Land Rights.
- 1.6.1.2. PAC 341 – Structures and improvements (O&M buildings, access roads).
- 1.6.1.3. PAC 344 – Generators (turbines towers, foundations, engineering, procurement, construction management, erection).
- 1.6.1.4. PAC 345 – Accessory Electrical Equipment (substation, meteorological towers, collector circuit system, SCADA.

1.6.2. Provide the complete terms and conditions of all lease arrangements.
- 1.6.2.1. Turbine site lease
- 1.6.2.2. Setback waivers
- 1.6.2.3. Neighbor agreements
- 1.6.2.4. Provide a statement demonstrating how conditions of Wis. Stat. § 196.52(9)(a)3(b) have been met (this pertains to leased generation contracts)
- 1.6.2.5. Affiliated interest approvals required. Include those applied for or received.

1.6.3. Discuss and provide the comparative costs of the alternatives identified and evaluated in Section 1.4.

1.6.4. Describe the effect of the proposed project on wholesale market competition. Include a description of how, at the time of this filing, the proposed facility will be treated as an intermittent resource in the MISO market.

1.6.5. Provide an estimate of the expected life span for the power plant.

1.6.6. Describe how the facility will be decommissioned at the end of the project's life.
- 1.6.6.1. Provide an estimate of the cost of and source of funding for decommissioning.

1.7 *IPPs Only –* MISO and Project Life Span

1.7.1. MISO Market - Describe how, at the time of this filing, the proposed facility will be treated as an intermittent resource in the MISO market.

1.7.2. Provide an estimate of the expected life span for the power plant.

1.7.3. Describe how the facility will be decommissioned at the end of its life span.

1.7.3.1. Provide an estimate of the cost of and source of funding for decommissioning.

1.8 *Utilities and IPPs -* Required Permits and Approvals

1.8.1. **Approvals and Permits -** For each of the regulatory agencies listed below provide the following information:

- regulatory agency
- the approvals/permits required,
- application filing date,
- the status of each application,
- agency contact name and telephone number:

1.8.1.1. Federal
- 1.8.1.1.1. Federal Aviation Administration (FAA)
- 1.8.1.1.2. US Army Corps of Engineers (USACE)
- 1.8.1.1.3. US Fish and Wildlife Service (USFWS)
- 1.8.1.1.4. Other federal agencies not listed above

1.8.1.2. State
- 1.8.1.2.1. Department of Transportation (DOT)
- 1.8.1.2.2. Department of Natural Resources (DNR)
- 1.8.1.2.3. Other state agencies not listed above

1.8.1.3. Local Permits – including county, town, city, and village

1.8.2. **Correspondence with Permitting Agencies -** Provide copies of correspondence to and from state and federal agencies that relate to permit approval, compliance approval, or project planning and siting. Provide copies of any correspondence to or from local governments. This should continue after submittal of the application.

2.0 TECHNICAL DESCRIPTION - PROJECT AREA, TURBINES, TURBINE SITES, AND ANCILLARY FACILITIES

2.1 Estimated Wind Speeds and Projected Energy Production

Provide a complete wind speed and energy production assessment for the project. This report should include, at a minimum:

2.1.1. Wind speeds and source of wind speed data used in analysis
2.1.2. Wind roses (monthly and annual)
2.1.3. Gross and net capacity factor (explain the method used to calculate the capacity factors and provide the data used)
2.1.4. Estimated energy production of project
- 2.1.4.1. Estimated production losses
- 2.1.4.2. Estimated net energy production

2.2 Turbine Type and Turbine Characteristics

2.2.1. Identify the manufacturer and model of turbine generator to be used. (If no Turbine Purchase Agreement has been signed, applicants should identify the turbine or turbines being considered. It is acceptable to identify a range by providing information on the largest and smallest turbine being considered, however, consult with Commission staff prior to preparing the application.)

2.2.2. Turbine Delivery Date – Indicate whether or not this date is firm.

2.2.3. Total number of turbines required for project.

2.2.4. Technical Characteristics of Turbines
- 2.2.4.1. Hub Height
- 2.2.4.2. Blade length
- 2.2.4.3. Swept Area
- 2.2.4.4. Total Height
- 2.2.4.5. Cut-in Speed
- 2.2.4.6. Cut-out Speed
- 2.2.4.7. Fixed or Variable Speed – include rpm
- 2.2.4.8. Rated Wind Speed
- 2.2.4.9. Turbine Power Curve (provide actual data – wind speed and rated output needed to create the curve)

2.2.5. Technical Characteristics of Turbine Towers
- 2.2.5.1. Type of tower and material used
- 2.2.5.2. Tower dimensions and number of sections required

2.2.6. Scale drawings of turbines including turbine pad and transformer box.

2.3 Construction Equipment and Delivery Vehicles

Provide a description of the types of construction equipment needed to build the project and the types of delivery vehicles that would be used to deliver turbines, towers, and blades to tower sites. For large equipment and vehicles include:

2.3.1. Types of construction equipment and delivery vehicles

2.3.2. Gross vehicle weight (loaded and unloaded) for all vehicles using local roads

2.3.3. For vehicles used for turbine/tower/blade/crane delivery (diagrams or drawings of vehicles are acceptable). Include:
- 2.3.3.1. Overall vehicle length
- 2.3.3.2. Turning radius
- 2.3.3.3. Minimum ground clearance

2.3.3.4. Maximum slope tolerance

2.3.4. **Cranes -** Describe types of cranes to be used and for what purpose. Include:
2.3.4.1. Weight of crane
2.3.4.2. Crane lift rating
2.3.4.3. If assembly of crane is required at work site answer the following
2.3.4.3.1. Time required to assemble crane
2.3.4.3.2. If the crane must be disassembled and reassembled during construction explain why.

2.3.5. **Roads and Infrastructure -** Estimate the potential impacts of construction and delivery vehicles on the local roads. Provide the following:
2.3.5.1. Describe methods to be used to handle heavy or large loads on local roads.
2.3.5.2. Probable routes for delivery of heavy and oversized equipment and materials.
2.3.5.3. Potential for road damage and any compensation for such damage.
2.3.5.4. Probable locations where local roads would need to be modified, expanded, or reinforced in order to accommodate delivery of turbines, blades, or towers.
2.3.5.5. Include an estimate of whether or not trees near or in road ROW might need to be removed.
2.3.5.6. Provide an estimate of likely locations where local electric distribution lines will need to be disconnected in order to allow passage of equipment and materials
2.3.5.6.1. Describe how residents will be notified before local power would be cut.
2.3.5.6.2. Estimate the typical duration of a power outage resulting form equipment or materials delivery.

2.3.6. **Construction Traffic -** Anticipated traffic congestion and how congestion will be managed, minimized or mitigated. Include:
2.3.6.1. List of roads most likely to be affected by construction and materials delivery.
2.3.6.2. Duration of typical traffic disturbance and the time of day disturbances are most likely to occur.

2.4 Other Project Facilities

2.4.1. **Turbine Site Foundation -** Describe the type of foundation or foundations to be used. If more than one type of foundation may be needed describe each and identify under what circumstances each foundation type would be used. Include the following:
2.4.1.1. Dimensions, surface area and depth required for each foundation.
2.4.1.2. Amount of soil excavated for each foundation type.
2.4.1.3. Describe how excavated soils will be handled including disposal of excess soil.

2.4.1.4. Materials to be used for the foundation. Include:
2.4.1.4.1. Approximate quantity and type of concrete required for typical foundation.
2.4.1.4.2. Materials required for reinforcement.
2.4.1.4.3. Description of the tower mounting system
2.4.1.5. Provide technical drawings of each foundation type to be used showing foundation dimensions.

2.4.2. **Turbine Site Construction Area -** Describe turbine site construction area. Include location and dimensions for:
2.4.2.1. Crane pads.
2.4.2.2. Lay-down areas.
2.4.2.3. Parking area.
2.4.2.4. Provide a scale drawing showing the general construction setup for turbine sites.

2.4.3. **Access Roads**
2.4.3.1. Provide the total number of miles required for turbine access roads.
2.4.3.2. Describe materials to be used and methods for construction of access roads including road bed depth.
2.4.3.3. Specify the required width of access roads. Fully describe any differences between final road size and that required during construction. (e.g. if access roads would be used for temporary crane paths).
2.4.3.4. Describe any site access control (i.e. fences or gates)

2.4.4. **Crane Paths –** Provide the following if cross-country crane paths would be needed to move construction cranes between turbine sites:
2.4.4.1. Explain why existing roads and access roads cannot be used and why cross-country crane paths are required
2.4.4.2. Description of materials to be used and methods for construction of crane paths.
2.4.4.3. Crane path widths and depths.
2.4.4.4. Discuss when and how crane paths would be removed and land recovered.

2.4.5. **General Construction Areas**
2.4.5.1. Identify size and location of lay-down areas outside of those found at the turbine sites and any other areas used for material storage.
2.4.5.2. Identify size and location of construction parking areas.
2.4.5.3. Describe the expected use of these areas after project completion.
2.4.5.4. Provide a list of all hazardous chemicals to be used on site during construction and operation (including liquid fuel).
2.4.5.5. Discuss spill containment and cleanup measures including the Spill Prevention, Control, and Countermeasures (SPCC) and Risk Management planning for the chemicals proposed.

2.4.6. **Transmission and Distribution Interconnection**

2.4.6.1. Describe any transmission or distribution grid interconnection requirement.

2.4.6.2. Describe all communications and agreements, official or otherwise, with the transmission or distribution owner.

2.4.6.3. For transmission interconnections, indicate where the project is in the MISO Queue and provide copies of the latest draft or final MISO report for the project interconnect. During the PSC review process applicant must continue to supply the latest reports from MISO.

2.4.7. **Collector Circuits**

2.4.7.1. Total number of miles of collector circuits required – separated by circuit type (overhead vs. underground).

2.4.7.2. Specify the collector circuit voltage to be used.

2.4.7.3. Transformer type, location, and physical size of transformer pad at each turbine site.

2.4.7.4. Underground Collector Circuits

2.4.7.4.1. Conductor to be used

2.4.7.4.2. Burial depth and width of trench

2.4.7.4.3. Describe trench and how lines would be laid (direct buried, conduit etc.) Provide scale drawing of underground circuit.

2.4.7.5. Overhead Collector Circuits

2.4.7.5.1. Size of pole to be used.

2.4.7.5.2. Engineering drawing of structure to be used.

2.4.8. **Construction Site Lighting**

2.4.8.1. Describe the site lighting plan during project construction.

2.4.8.2. Provide copies of any local ordinances relating to lighting that could apply.

2.5 Substation

If the project includes the construction of a substation or modifications to an existing substation, provide the following information:

2.5.1. A complete electrical description of required substation facilities including a list of transformers, busses, and any interconnection facilities required.

2.5.2. Indicate the size (in acres) of the land purchase required for the new substation or substation expansion.

2.5.3. Indicate the actual size of the substation or substation addition in square feet, the dimensions of the proposed substation facilities, and the orientation of the substation within the purchase parcel.

2.5.4. Identify current land ownership and whether applicant has control of property or whether or not an option to buy has been signed.

2.5.5. Describe substation construction procedures (in sequence as they will occur) including erosion control practices (see Section 3.1).

2.6 Operations and Maintenance Building

2.6.1. Describe the purpose and use of the proposed O&M building

2.6.2. Number of full-time employees that would be working at the facility.

2.6.3. Size of property needed (provide physical dimensions and acres).

2.6.4. **Building and Building Footprint**
- 2.6.4.1. Provide a drawing or diagram of the O&M building with dimensions including square feet.
- 2.6.4.2. Describe the type of building to be constructed (metal, frame, etc.)

2.6.5. **Lighting and Security Plan for O&M Property**
- 2.6.5.1. Describe how the building property will be lit and how the lighting plan minimizes disturbance to nearby residences.
- 2.6.5.2. Describe any security plans for the property (fences etc.).

2.6.6. **Describe any other facilities needed, including:**
- 2.6.6.1. Parking lots.
- 2.6.6.2. Sheds or storage buildings.
- 2.6.6.3. Supplies of water.
- 2.6.6.4. Sewer requirements.

3.0 CONSTRUCTION SEQUENCE AND WORKFORCE

3.1 Construction Sequence

3.1.1. Provide the construction schedule for the proposed project. Include a timeline showing construction activities from beginning of construction to in-service. Identify all ***critical path*** items.

3.1.2. Provide a description of the staging and construction sequence required for building the proposed project at a typical turbine site. Include the delivery of materials.

3.1.3. Estimate of time required to complete construction at a typical turbine site.

3.2 Workforce

3.2.1. Provide information on the workforce size and skills required for plant construction and operation.

3.2.2. Estimate how much of the expected workforce will come from local sources.

4.0 PROJECT MAPS, AERIAL PHOTOGRAPY, PHOTO SIMULATIONS, AND GIS SHAPEFILES

Aerial Photographs: Recent aerial photos are required for every project. Aerial photographs submitted with an application should be no older than three years – more recent in rapidly developing areas. Aerial photos are typically used as a base for most maps and should be provided at a scale of at least 1:4800. **Actual aerial photographs are not acceptable. Rectified orthophotos created using GIS are required – reduced size photos are not adequate.** The standard GIS platform for Wisconsin state agencies is ESRI ArcGIS 10.

In addition to providing the maps listed below, all GIS data used to create those maps must also be submitted with the application (see Section 4.2 for a list of GIS shapefiles required and pages 7-8 for instructions on GIS map projections). The extent of the aerial photography must be inclusive enough to show the landscape context within which the proposed facilities would be placed. Typically, this requires extending the map extent to at least 10 miles beyond any project boundary.

For the maps listed below provide both hard copy (maximum size 11"x 17") and digital versions. Refer to Digital Submissions and Formats on pages 7-8.

4.1 Project Area Maps:

Basic (background) features for both the general and the detailed project area maps must include: a recent aerial photograph (no older than 3 years), major roads, major water bodies and rivers, cities and villages. All features should be labeled appropriately. In addition the maps should contain the following features:

4.1.1. **General Project Area Map** (The extent of this map should show the entire project area and reach at least 1 mile beyond the project area boundary. Approximate scale 1:4800)

Clearly show:

- The boundaries of the project area,
- All proposed and alternate turbine sites (symbolized differently and identified by number),
- Any new substation facilities or required expansion of an existing substation,
- O&M Building and facilities,
- All turbine access roads.

4.1.2. **Detailed Project Area Map** (The scale for this map should be larger than that of the general project map so that the added detail is clearly visible. This usually necessitates a series of maps.

Clearly show:

- All the features listed for the General Project map,
- All collector circuits both underground and overhead,
- Any cross-country crane paths that may be needed during construction,

- Existing utility facilities (electric transmission and distribution, pipelines etc.),
- Industrial/commercial facilities out to 1 miles from project area boundary
- All residences out to 1 mile from project area boundary,
- Day-care centers out to 1 mile from project area boundary,
- Hospitals or other health care facilities out to 1 mile from project area boundary.

(If new residences, day-care centers, hospitals, or commercial or industrial facilities have been built since the date of the aerial photo base map, note those features accurately on the detailed project area map)

4.1.3. **Topographic Maps**

Provide topographic maps at 1:24,000 or larger scale showing:
project boundary, all turbine sites (proposed and alternate), substation facilities, collector circuits, access roads, and O&M building.

4.1.4. **Substation**

4.1.4.1. Provide a map showing with the following features

- The location, dimensions (in feet and acres), and layout of any new substation or proposed additions to an existing substation.
- Recent aerial photos of the substation site,
- The location of all power lines entering and leaving the substation, including any turning structures. Show details in a separate diagram of any turning structures that might impact adjacent land owners (size, type of structure, guying, etc.).
- For new substations, show the location of the access road, for expansion of existing substations, show details on changes to access roads that may be required (width, length, location, etc.).
- Show parcel data including the name of landowners for the substation site or substation addition. Include adjacent landowners.
- Show topographic contours of the property.

4.1.4.2. Provide an engineering diagram/s of the substation and substation equipment include any turning structures and interconnection facilities.

4.1.5. **O&M Building**

4.1.5.1. Provide a map showing the O&M building, parking area, roads, and any other facilities. Include, as a background, a recent aerial photograph of the property.

4.1.5.2. Provide an engineering drawing of the O&M building

4.1.6. **Natural Resources and Land Use/Ownership Maps**

Wetland maps. Show the following features:

- For wetlands inside the project area. All wetlands within the project area must be delineated (field-delineated or delineated using aerial photography).
- Show all wetlands up to 2 miles outside the project boundary using the Wisconsin Wetland Inventory (WWI).
- All turbine sites and all connecting facilities (access roads, collector circuits, and crane paths).
- O&M Building
- Substation

4.1.6.2. **Land Ownership Maps** Minimum scale 1:10,000 (map extent to 1.0 mile from the project boundary): Show the following features:

- Current parcel boundaries and landowners
- Roads
- Municipal boundaries
- Project boundary
- All Turbine sites (proposed and alternate)
- Access roads
- Collector circuits
- Crane paths
- Topographic contours

4.1.6.3. Public Lands Showing the following features-

- All publicly owned lands inside the project boundary and within 2 miles of the project area (parks, trails national/county/state forests, etc). Public lands should be clearly labeled.
- Project boundary
- Turbine sites
- Access roads
- Substation
- O&M Building

4.1.6.4. Land Cover Showing the following features

- The distribution of vegetative communities within the project area using the land cover categories in Section 5.3,
- Project area boundary,
- primary and alternate turbine sites,
- substation,
- O&M building
- access roads,
- crane paths ,
- collector circuits.

4.1.6.5. Flood Insurance Rate Maps (FIRMs) (Within the project boundary) - Provide flood insurance maps if the site is within one-half mile of a

floodplain.

4.1.6.6. Soil Survey Maps (within the project boundary)

4.1.6.7. Bedrock Maps **(**within the project boundary**)-** Map showing depth to bedrock for the entire project area.

4.1.7. **Community Maps**

4.1.7.1. **Zoning Maps** - Provide a map or maps of the project area showing existing zoning (e.g. agriculture, recreation, forest, residential, commercial etc.) Map should show existing zoning out to 0.5 miles beyond the boundaries of the project area.

4.1.7.2. **Sensitive Sites** - Additional map (if necessary) showing proximity to schools, day care centers, hospitals, and nursing homes up to 0.5 miles from the substation site.

4.1.7.3. **Airports -** Include the following features:

- All runways for public airports within 10 miles of the project boundary,
- All runways for private airports within 10 miles of the project boundary,
- All landing strips inside and within two miles of the proposed project boundary.
- Project boundary
- turbine sites both proposed and alternate

4.1.8. **Communication Infrastructure**

4.1.8.1. Identify radio, microwave towers, and any NEXRAD or Doppler weather radar installations on a map and show the results of the line of site analysis. Include communications and NEXRAD/Doppler installations within a 50 mile radius of the project area.

4.2 **GIS shapefiles -** Provide GIS shapefiles and attributes as listed below. (See pages 7 - 8 for format instructions.)

4.2.1. Project area boundary

4.2.2. Proposed turbine sites identified by number

4.2.3. Alternate turbine sites identified by number.

4.2.4. Access roads for proposed turbine sites (include road width)

4.2.5. Access roads for alternate turbine sites (include road width)

4.2.6. Crane Paths required for proposed and alternate turbine sites (include path width

4.2.7. Underground collector circuits (include number of conductors and voltage)

4.2.8. Overhead collector circuits (include voltage)

4.2.9. Electric distribution lines
- 4.2.9.1. All electric distribution lines within the entire project area (include voltage of each line and phases present (A, B, and or C,),
- 4.2.9.2. All electric distribution lines within one mile of the project boundary area (include voltage of each line and phases present (A, B, and or C).

4.2.10. Transmission lines within the project area identified by voltage.

4.2.11. New Substation - provide shapefiles showing:
- 4.2.11.1. Perimeter of entire parcel acquired or to be acquired,
- 4.2.11.2. Perimeter of substation,
- 4.2.11.3. Access road,
- 4.2.11.4. Other facilities such as a retention pond or storm water control,
- 4.2.11.5. All collector circuits entering the substation,
- 4.2.11.6. Transmission interconnect.

4.2.12. Expansion of an Existing Substation
- 4.2.12.1. Perimeter of expanded area,
- 4.2.12.2. Boundary showing any new land acquisition,
- 4.2.12.3. Location of all new power lines and reconfigured lines,
- 4.2.12.4. Location of all collector circuits entering the substation,
- 4.2.12.5. Location of any modified interconnection.

4.2.13. O & M Building
- 4.2.13.1. Perimeter of property acquired,
- 4.2.13.2. Perimeter of building,
- 4.2.13.3. Location and perimeter of other buildings,
- 4.2.13.4. Location and perimeter of parking lot,
- 4.2.13.5. Location of access road.

4.2.14. Wetlands in the project area
- 4.2.14.1. WWI Wetlands,
- 4.2.14.2. Delineated wetlands. (See Section 6.2.1)

4.2.15. Land owners/buildings
- 4.2.15.1. Residences on all participating parcels,
- 4.2.15.2. Non-participating residences inside the project boundary,
- 4.2.15.3. Land ownership and parcels within the project area,
- 4.2.15.4. Land ownership and parcels within 1 mile of the project area boundary,
- 4.2.15.5. Confined animal operations - provide shapefiles showing.
  - ➢ The locations of any confined farm animals within the project area,

- All confined animals operations within one mile of the project area boundary,
- For each confined animal shapefile provide attribute data that identifies the type of animal, the number of confined animals, and the name of the land owner,

4.2.16. All public lands within the project boundary and public lands within 2 miles of the project boundary.

4.2.17. All public airport runways within 10 miles of the project boundary. Show runway orientation and length

4.2.18. All private airports and landing strips inside and within two mile of the proposed project boundary. Show runway orientation and length.

4.2.19. Land Cover/Vegetative Communities (Do Not Use Obsolete WDNR Land Cover data.) See section 5.3.

4.2.20. Provide a GIS shapefile showing the locations of properties enrolled in the Conservation Reserve Program.

4.2.21. FEMA flood plains within the project area.

4.2.22. Aerial Photos (no older than three years) of project area and surrounding landscape (10 mile radius of the project area).

4.3 Topography - Raster files of topographic features within the project area and surrounding landscape (10 mile radius of the project area).

4.4 Photo Simulations

Photo simulations are required. Simulations should seek to provide an accurate representation of what the project area would most likely look like after the project is completed. *In order to be certain that any photo simulations provided in an application will be useful,* ***please consult with PSC staff before preparing and submitting photos.***

5.0 NATURAL AND COMMUNITY RESOURCES, DESCRIPTION AND POTENTIAL IMPACTS

5.1 Site Geology

5.1.1. Describe the geology of the project area.

5.1.2. Geotechnical Report on Soil Conditions

5.1.2.1. Provide a summary of conclusions from any geotechnical report or evaluation of soils in the project area including:

- Results of soil borings including a review of soil bearing capacity and soil settlement potential.
- Identify any soil conditions related to site geology that might create circumstances requiring special methods or management during construction.

5.1.2.2. Depth to Bedrock

- Identify any turbine sites where foundation construction must be modified because of the presence of bedrock.
- Describe construction methods and foundation issues associated with situations where bedrock formations are near the surface.
- Discuss the likelihood or potential that construction on bedrock formations may negatively impact private wells within two miles of turbine sites.

5.2 Topography

5.2.1. Describe the general topography of the project area.

5.2.2. Describe expected changes to site topography due to grading activities.

5.3 Land Cover

5.3.1. **Vegetative Communities in the Project Area.** List and identify the dominant plants in the following community categories: Analysis should use recent data, not greater than 2 years old. Land cover can be based on recent aerial photography or on-site evaluation.

5.3.1.1. Agricultural

- Row crops.
- Hay/pasture/old fields.
- Other.

5.3.1.2. Non-Agricultural Upland

- Prairie/Grasslands.
- Upland Woods.

5.3.1.3. Wetlands

- Wooded Wetlands.
- Marshes.
- Bogs.
- Fens.

5.3.2. **Acres of Land Cover Categories in Project Area**
Estimate of the number of acres within each land cover category listed below. Provide this information in table format and explain what method was used to calculate the areas reported.

5.3.2.1. Agricultural

- Row crops.
- Hay/pasture/old field.
- Other.

5.3.2.2. Non-Agricultural Upland
- Prairie/Grasslands.
- Upland Woods.

5.3.2.3. Wetlands
- Wooded Wetlands.
- Marshes.
- Bogs.
- Fens.

5.3.2.4. Developed Land
- Residential.
- Commercial/Industrial.

5.3.3. **Land Cover Impacts**

In table format, estimate the number of acres, in each land cover type identified in Section 5.3.2, that will be affected by project construction and or facilities. Breakdown impacts into temporary vs. permanent impacts for the following categories[3].

5.3.3.1. Turbine Pads.

5.3.3.2. Collector Circuits.
For collector circuits in wooded areas, disclose whether or not a ROW around the cables would be maintained in an open (no tree) condition.

5.3.3.3. Access Roads.

5.3.3.4. Crane Paths.

5.3.3.5. Substation.

5.3.3.6. O&M Building.

5.4 Wildlife

5.4.1. Describe existing wildlife resources and estimate expected impacts to plant and animal habitats and populations.

5.4.2. **Avian and bat pre-construction surveys** (See Biological Surveys page 3)

5.4.2.1. Provide a summary of pre-application consultation meetings held with DNR for the purposes of determining whether or not pre-construction bird and/or bat studies would be required for the project.

5.4.2.2. If, after consultation with the DNR, avian and/or bat pre-construction studies are required, provide the following:
- A copy of the DNR approved survey methodologies for both avian and/or bat studies including the dates of surveys and a schedule for releasing data and reports to the PSC and DNR.
- Copies of all data collected for all pre-construction studies (data should be provided using a format acceptable to DNR and PSC staff.).

[3] Temporary impacts are those that are typically recovered after construction is completed. Examples of temporary impacts include parking lots, lay-down area, crane paths and pads and collector circuits located in farm fields. Permanent impacts are associated with access roads, turbine pads, collector circuits in forested areas were a cleared ROW is maintained, and substations.

- Final report/s or analyses prepared using the data collected. (Minimum of three seasons - See Biological Surveys Page 3)

5.5 Public Lands - List all public properties within the project area and in a separate list all public properties within 10 miles of the project area boundary.

5.5.1. **State Properties, including:**
- 5.5.1.1. Wildlife Areas.
- 5.5.1.2. Fisheries Areas.
- 5.5.1.3. State Parks.

5.5.2. **Federal Properties, including:**
- 5.5.2.1. Wildlife Refuges.
- 5.5.2.2. Parks.
- 5.5.2.3. Scenic Riverways.

5.5.3. **County Parks.**

5.6 Local Zoning and Safety

Utilities (CA)

5.6.1. Provide copies of any zoning ordinances affecting the project area and within two miles of the project boundary. Provide only the page(s) directly citing ordinance language.

5.6.2. Describe any zoning changes needed for the project.

5.6.3. Describe zoning changes that the applicant has requested of local government for the proposed project. Include:
- 5.6.3.1. The name of the entity responsible for zoning changes.
- 5.6.3.2. Description of the process required to make the zoning change.
- 5.6.3.3. The outcome or expected outcome for requested zoning changes.

5.6.4. Township road safety and use plans.
- 5.6.4.1. Provide details on any plan or permit requirement pertaining to local road safety, use, or repair.

5.6.5. Other conditional use permits
- 5.6.5.1. Provide details on any other conditional use permit required by local government.

Utilities and IPPs (CPCN)

5.6.6. Provide a list of potential local issues normally associated with zoning, road use and safety, or other condition uses.

5.6.6.1. Provide copies of all correspondence to and from local government pertaining to issues of zoning, safety, or local road use safety plans.

5.6.6.2. Provide a discussion of how local concerns will be accomodated.

5.7 Land Use Plans - Provide a copy of all land-use plans adopted by local governments that pertain to the project area, extending out two miles from the project boundary. (See Reduction of Paper section on Page 4, first bullet point.) Include not only general land-use plans, but also other relevant planning documents such as:

5.7.1. County Recreation Plans.

5.7.2. Farmland Preservation Plans.

5.7.3. Highway Development Plans.

5.7.4. Sewer Service Area Plans.

5.8 Archeological and Historic Resources - If after consultation with the Wisconsin Historical Society (WHS) and PSC staff, the work of a qualified archeologist is required, reference the archeologist's report in the application. (Information about the location of archeological and historic resources are not considered confidential)

5.8.1. Provide a list of all historic and archeological sites potentially affected by the proposed project.[4]

5.8.2. For each proposed site, list the county, town, range, section and ¼, ¼ section in which construction would occur.

5.8.3. For each archeological or historical resource identified, describe how the proposed project might affect the resource and how the project could be modified to reduce or eliminate any potential effect on the resource. Modifications to the proposed project could include site modification, route changes for access roads, crane paths, or collector circuits, and/or modified construction practices.

5.9 ER Review - Endangered, Threatened, and Special Concern Species and Communities

5.9.1. Provide a copy of the DNR approved ER review and all supporting materials (see DNR Permits and Reviews – Page 4-5.).

5.9.2. Include a map showing the location of endangered, threatened and special concern species and/or their habitat, and natural communities identified on the ER Review that occur within a minimum of 1-mile of the proposed project area or as agreed to by the DNR.

ER Reviews, supporting materials, and maps should be filed as confidential documents (See DNR Permits and Reviews Page 5).

[4] This information is available from the WHS, Wisconsin Historic Preservation database (WHPD), which may require a fee or subscription. Qualified archeologists generally have access to the WHPD database.

6.0 WATERWAY/WETLAND PERMITTING ACTIVITIES

Section 6.0 covers information required by DNR for waterway, wetland, and erosion control permits. The following subsections apply to both proposed and alternate turbine sites.

Questions about this section should be directed to the DNR, Office of Energy.

6.1 Waterway Permitting Activities

For each access road, collector circuit, crane path, or other facility directly affecting waterways; identify and number all waterway activities, based on Table 1 (Supplement to DNR Form 3500-53). For each stream or waterbody provide site photos, the width at the top of the bank, and the slope of the banks at the proposed activity location. For each stream affected by activities occurring below the ordinary high water mark, note the water and sediment quality and the potential for either to be contaminated. For each activity, note if the waterway is defined as an Area of Special Natural Resource Interest (ASNRI) under the provisions of Ch. NR 1 Wis. Admin. Code. If a temporary bridge is required for construction, identify the type of structure to be used. Use Table 1 as the format for completing this information request. See Figure 1 for information on River Basin location and abbreviations

6.2 Wetlands

For each access road, collector circuit, crane path, or any other facility directly affecting wetlands; identify and number all wetland crossings. Insert this information in Table 1 as discussed above in directional order with the waterways.

6.2.1. Identify all wetlands on a map using data from the Wisconsin Wetland Inventory (WWI) and identify any other wetlands or changes to WWI boundaries based on delineations using all forms and information required by and in accordance with the January 1987 Technical Report Y-87-1 entitled, "Corps of Engineers Wetland Delineation Manual," including relevant guidance documents. Wetland delineation reports should be submitted to the DNR as a hardcopy with the application. Electronic copies of wetland delineation reports (in MS Word format, or similar) may be submitted on a CD.

6.2.2. **Wetland Crossings**

6.2.2.1. Describe the length of each wetland crossing.

6.2.2.2. For each crossing, identify wetland type using the WWI classification, and wetland type as identified by plant community type (floodplain forest, hardwood swamp, coniferous bog, coniferous swamp, open bog, calcareous fen, shrub swamp, alder thicket, shrub-carr, sedge meadow, shallow marsh, deep marsh, wet to wet-mesic prairie, fresh (wet) meadow, shallow open water communities, seasonally flooded basin).

6.2.2.3. Based on discussions with DNR staff during pre-application consultations, document the presence and percent cover of key wetland invasive species at each wetland crossing.

6.2.3. **Sensitive Wetlands**

Determine if any wetlands affected are considered sensitive including any wetlands in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code) including:

6.2.3.1. Cold Water Community as defined in § NR 102.04(3)(a), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes

6.2.3.2. Lakes Michigan and Superior and the Mississippi River.

6.2.3.3. State- or federally-designated Wild and Scenic River.

6.2.3.4. State-designated riverway.

6.2.3.5. State-designated scenic urban waterway.

6.2.3.6. Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study.

6.2.3.7. Calcareous fen.

6.2.3.8. State park, forest, trail or recreation area.

6.2.3.9. State and federal fish and wildlife refuges and fish and wildlife management area.

6.2.3.10. State- or federally-designated wilderness area.

6.2.3.11. State-designated or dedicated natural area (SNA).

6.2.3.12. Wild rice water listed in § NR 19.09, Wis. Adm. Code.

6.2.3.13. Surface water identified as outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code.

6.2.3.14. Other sensitive wetlands are deep marsh, northern or southern sedge meadow not dominated by reed canary grass, wet or wet-mesic prairie not dominated by reed canary grass, fresh wet meadows not dominated by reed canary grass, coastal marsh, interdunal or ridge and swale complex, wild rice-dominated emergent aquatic, open bog, bog relict, muskeg, floodplain forest, and ephemeral ponds in wooded settings.

6.3 Mapping Wetland and Waterway Crossings

For each facility (access road, crane path, collector circuit etc) in or adjacent to wetlands or waterways, provide three (3) maps, as described in Subsections 6..3.1 – 6..3.3, for each location on 11x17 inch paper, each with the same scale.

6.3.1. Recent air photo showing only the proposed facility (access road, crane path, collector circuit, substation etc.) crossing or adjacent to wetlands or waterways.

6.3.2. Topographic map showing the facility (road, crane path, collector circuit etc.) crossing or adjacent to wetlands or waterways.

6.3.3. Recent air photos showing the locations of the following items:

6.3.3.1. Facility crossing or adjacent to wetland or waterway.

6.3.3.2. Waterways.

6.3.3.3. WWI (as a transpicuous layer).

6.3.3.4. Delineated Wetlands (clearly marked).

6.3.3.5. Hydric soils- (as a transpicuous layer) indicated faintly to be used as secondary review, if needed.

6.3.3.6. Proposed temporary bridge locations (labeled to correlate with Table 1).

6.3.3.7. Locations for other Chapter 30 activities such as grading or riprap (labeled to correlate with Table 1).

6.4 Waterway/Wetland Construction Methods

6.4.1. Waterway Crossings – Construction Methods

6.4.1.1. Describe specific methods to be used for crossings of any streams marked as perennial or intermittent on USGS topographic maps, including location and methods of construction for:

6.4.1.1.1. Access Roads

6.4.1.1.2. Crane Paths.

6.4.1.1.3. Collector Circuits

6.4.1.2. Describe the method of crossing including structure type if applicable.

6.4.1.3. Describe cleaning of machinery to prevent spread of invasive species.

6.4.1.4. Describe the proposed area of land clearance and disturbance at waterway crossings and the types of equipment proposed for the work.

6.4.1.5. In the case of underground construction for collector circuits, describe the proposed method for crossing the stream or river. For boring operations, provide the size, depth and location of boring pits and the estimated amount of excavated materials that will result.

6.4.1.5.1. Describe methods for de-watering of boring pit or structure foundations. Include a discussion of discharge locations and suspended solids standards for discharge water.

6.4.1.5.2. Identify contingency plans for bore refusal and frac-outs if directional boring is proposed. Provide scaled pre and post-project diagrams for all crossings including top view and cross section or side views.

6.4.2. Wetland Crossings – Construction Methods

6.4.2.1. Describe specific methods to be used for wetland crossings including location and methods of construction for:

6.4.2.1.1. Access Roads.

6.4.2.1.2. Crane Paths.

6.4.2.1.3. Collector Circuits.

6.4.2.2. Describe cleaning of machinery to prevent spread of invasive species.

6.4.2.3. Describe the proposed area of land clearance and disturbance at wetland crossings and the types of equipment proposed for the work.

6.4.2.4. Describe methods and discharge locations for site de-watering, and locations for stockpile of fill materials.

6.4.2.5. In the case of underground construction for collector circuits, describe the proposed method for crossing the wetland. For boring operations, provide the size, depth and location of boring pits and the estimated amount of excavated materials that will result.

6.4.2.5.1. Describe methods for de-watering of boring pit. Include a discussion of discharge locations and suspended solids standards for discharge water.

6.4.2.5.2. Identify contingency plans for bore refusal and frac-outs if directional boring is proposed. Provide scaled pre and post-project diagrams for all wetland crossings including top view and cross section or side views.

6.5 Erosion Control and Storm Water Management Plan

Describe erosion control and storm water management measures to be utilized, as appropriate. If the project will involve land disturbance in excess of 1 acre, the applicant's request for permits must include coverage under the Construction Site Storm Water Runoff Permit from DNR under Wis. Admin. Code § NR 216. The applicant will be required to submit a Construction Project Consolidated Permit Application (i.e., Notice of Intent or NOI) to the DNR to request permit coverage after developing an Erosion Control and Storm Water Management Plan describing the best management practices that will be used on-site for erosion control and post-construction storm water management. The plan, by design, must meet the applicable non-agricultural performance standards of Chapter NR 151, The DNR-approved erosion and sediment control and post-construction technical standards and NOI Form are available on the DNR Storm Water Program web-site at: http://dnr.wi.gov/org/water/wm/nps/stormwater/constrforms.htm

The following checklist serves as guidance in the completion of an Erosion Control and Storm Water Management Plan necessary to meet the requirements of the Chapter 30 and NR 216 permits, and the non-agricultural performance standards of NR 151.. The Erosion Control and Storm Water Management Plan should contain the following components:

6.5.1. Erosion Control Methods and Materials

Describe the types of erosion control methods that will be used during project construction to protect disturbed areas. Include where applicable:

6.5.1.1. Soil and slope stabilization.
6.5.1.2. Seeding and mulching.
6.5.1.3. Matting, tracking pads, silt fences, stockpile protection.
6.5.1.4. Dewatering-related erosion and sediment control.
6.5.1.5. Channel protection.
6.5.1.6. Any other appropriate erosion control measures.
6.5.1.7. Details and typical section drawings of all the erosion control methods utilized.

6.5.2. Erosion Control Measure Site Plan

Include a site plan view and drawings illustrating: (some typical drawings may be appropriate after consultation with the DNR)

6.5.2.1. Construction site boundary.
6.5.2.2. The location of all erosion control measures.
6.5.2.3. Location of stockpiled soil.
6.5.2.4. Vehicle and equipment access sites.

6.5.2.5. Areas of disturbance.
6.5.2.6. The drainage area configuration.
6.5.2.7. Surface water diversion measures.
6.5.2.8. Topography.
6.5.2.9. Existing floodplains and wetlands.
6.5.2.10. Location of trees and unique vegetation.

6.5.3. **Sequence of Erosion Control Measures**

List and give a detailed description of the sequence of erosion control measures that will occur (i.e. placed, relocated, and replaced) during all phases of construction including:

6.5.3.1. Clearing and grubbing.
6.5.3.2. Material installation.
6.5.3.3. Channel construction.
6.5.3.4. Revegetation processes.
6.5.3.5. Seeding and mulching/matting.

6.5.4. **Off-Site Diversion Methods**

6.5.4.1. Identify off-site contributions of water affecting project construction sites.
6.5.4.2. Methods of controlling off-site water contributions.
6.5.4.3. Site plan indicating:
6.5.4.3.1. Where the off-site water is originating from.
6.5.4.3.2. Locations of diversion measures on-site.

6.5.5. **Provisions for Inspection and Maintenance**

Document the provisions for:

6.5.5.1. The regular inspection of all erosion control efforts per the requirements of Wis. Admin. Code § NR 216.
6.5.5.1.1. Identify who will perform the inspections.
6.5.5.1.2. Specify when the inspections will occur.
6.5.5.1.3. Any special circumstances initiating an inspection.
6.5.5.2. The regular maintenance of all erosion control efforts.
6.5.5.2.1. Identify who is responsible for the maintenance.
6.5.5.2.2. Specify corrective actions, if site is not maintained according to provisions.

6.5.6. **Post Construction Storm Water Management**

6.5.6.1. Develop a storm water management plan per the requirements of § NR 216.47, Wis. Admin. Code
6.5.6.1.1. Where applicable, describe and provide details on the best management practices that will be used to meet the performance standards of s. NR 151.12, Wis. Admin. Code

6.6 Materials Management Plan

Describe materials management methodology. Applicants may opt to refer to the company's standard Materials Management Plan to meet most of these requirements, though some form of supplemental information on project-specific elements may be required. The following checklist serves as guidance in the completion of a Materials Management Plan necessary to meet the requirements of the Chapter 30 and NR 216 Permits. The Materials Management Plan should contain information on all of the following components, where applicable.

6.6.1. **Haul Routes**

- 6.6.1.1. Indicate how and where hauled materials will be routed, including:
  - 6.6.1.1.1. Inbound materials
  - 6.6.1.1.2. Outbound materials
  - 6.6.1.1.3. Clean fill materials
  - 6.6.1.1.4. Contaminated materials
  - 6.6.1.1.5. Others
- 6.6.1.2. Alternate locations if necessary.
- 6.6.1.3. Include a haul route diagram indicating haul route locations.

6.6.2. **Stockpile Areas**

- 6.6.2.1. List and describe:
  - 6.6.2.1.1. Material to be stockpiled.
  - 6.6.2.1.2. Where will material be stockpiled on-site.
  - 6.6.2.1.3. Measures to protect stockpiled areas, if applicable.
- 6.6.2.2. Provide a plan view diagram indicating stockpile area locations.

6.6.3. **Equipment Staging Areas**

- 6.6.3.1. Where equipment will be stored on-site
- 6.6.3.2. Include a plan view of equipment storage areas on-site
- 6.6.3.3. Spill control and kits on-site

6.6.4. **Field Screening Protocol for Contaminant Testing**

If contaminated materials (i.e. soil) are encountered on-site, indicate:

- 6.6.4.1. How will the materials be screened.
- 6.6.4.2. Where will the materials be tested.
- 6.6.4.3. What protocols will be followed.
- 6.6.4.4. How work will be impacted.

6.6.5. **Estimated Types, Concentrations and Volumes of Contaminated Materials**

If contaminated materials are known to exist on-site, list and describe:

- 6.6.5.1. The type of contaminant.
- 6.6.5.2. Where the contaminant is located on-site.
- 6.6.5.3. Media in which the contaminant is located within (i.e. soil, water, etc.).
- 6.6.5.4. The estimated concentration of the contaminant.
- 6.6.5.5. The estimated volumes of the contaminant.

6.6.6. **Methods for Dewatering of Excavated Materials**

If free water is found present in excavated materials, list and describe:

6.6.6.1. What methods will be used to correct the situation (i.e. how will water be removed).

6.6.6.2. Where these methods will take place on-site.

6.6.7. **Estimated Volumes of In-channel and Upland Excavated Materials**

6.6.7.1. Volume of Dredged Materials (cubic yards)

6.6.7.1.1. Excavation from bed and bank of waterway.

6.6.7.1.2. Excavation from wetland.

6.6.7.2. Volume of Upland Materials (cubic yards)

6.6.7.2.1. Excavation from areas outside of waterway and wetlands.

6.6.8. **Estimated Volumes and Location of Re-used In-Channel and Upland Excavated Materials**

6.6.8.1. Reuse of Dredged Materials

6.6.8.1.1. Provide the total volume of reused dredged materials in cubic yards.

6.6.8.1.2. Provide the location either on project plans or provide off-site address, property owner, and site map drawn to scale.

6.6.8.1.3. Provide the purpose of the dredged material usage (i.e. grading, trench backfill, etc.).

6.6.8.2. Reuse of Upland Materials

6.6.8.2.1. Provide the total volume of reused upland materials in cubic yards.

6.6.8.2.2. Provide the location either on project plans or provide off-site address, property owner, and site map drawn to scale.

6.6.8.2.3. Provide the purpose of the upland material usage.

6.6.9. **Off-site Disposal Plans for Contaminated Materials and Non-contaminated Materials**

6.6.9.1. Disposal of Dredged Materials

6.6.9.1.1. Total volume of disposed materials (cubic yards).

6.6.9.1.2. Disposal site location.

6.6.9.1.3. Type of disposal Site (i.e. confined disposal facility, landfill, etc.).

6.6.9.1.4. Disposal site name and address.

6.6.9.2. Disposal of Upland Materials

6.6.9.2.1. Total volume of disposed materials (cubic yards).

6.6.9.2.2. Disposal site location.

6.6.9.2.3. Type of disposal site (i.e. confined disposal facility, landfill, etc.).

6.6.9.2.4. Disposal site name and address.

6.7 Dewatering Plan

Provide details for pit/trench dewatering for collectors and for dewatering excavation for structure foundations. The following checklist serves as guidance in the completion of the Dewatering Plan necessary to meet the requirements of the Chapter 30 and NR 216 permits. Consider the following items in the Dewatering Plan.

6.7.1. **Dewatering/Diversion of Flow -** Provide detailed plans for the dewatering/diversion of flow/standing water removal consistent with DNR Technical Standard 1061 for dewatering. Include typical dewatering/diversion measure plans with:

- 6.7.1.1. Specifications for the dewatering/diversion of flow/standing water removal.
- 6.7.1.2. Methods employed to dewater/divert flow/treat water, if applicable.
- 6.7.1.3. Details of how methods will be employed.
- 6.7.1.4. Details of where methods will be employed.
- 6.7.1.5. Capacities and capabilities.

6.7.2. **Downstream Impact Minimization -** List and describe methods of minimizing downstream impacts during high flow conditions.

6.7.3. **Analysis of Possible System Overload Scenarios -** Provide the following information if the stream is overloaded:

- 6.7.3.1. Estimated volume of system overload (i.e. what rainfall overloads the system).
- 6.7.3.2. Estimated frequency of system overload (i.e. how often will the system be overloaded).
- 6.7.3.3. Actions taken if stream is to be overloaded.

6.7.4. **Impacts of System Overload on Construction Activities and Water Quality -** List and describe:

- 6.7.4.1. Anticipated number of lost work days.
- 6.7.4.2. Possible water quality impacts.
- 6.7.4.3. Methods of deterring adverse changes in water quality.

6.7.5. **Water Discharge Locations -** Provide the following:

- 6.7.5.1. Where water will be discharged.
- 6.7.5.2. How water will be discharged.
- 6.7.5.3. A site map indicating discharge locations.

6.7.6. **Details of a Back-up System -** If a back-up system becomes necessary indicate:

- 6.7.6.1. What type of back-up system will be used (include backup and standby equipment/power supply).
- 6.7.6.2. Conditions when the system will be needed.
- 6.7.6.3. How the back-up system will operate.
- 6.7.6.4. Where the back-up system will be located.

6.7.7. **High Flow Plan -** When flooding is likely to occur, list and describe the following:

6.7.7.1. How the water will be removed from the site.

6.7.7.2. Methods of water removal (e.g. pumping).

6.7.7.3. Methods of minimizing water contamination (e.g. treatment methods).

6.7.7.4. Protocol for evacuating materials from the flood conveyance channel including:

6.7.7.4.1. List of materials that would require evacuation during high flow periods.

6.7.7.4.2. How will the materials be evacuated from the flood conveyance channel.

6.7.7.4.3. Where will the materials be temporarily placed on-site.

6.7.7.4.4. How will the materials be transported.

6.7.7.4.5. Methods of protecting the materials.

6.7.7.4.6. Include a site map indicating the location of temporary placement.

6.7.7.5. Protocol for evacuating machinery from the flood conveyance channel including

6.7.7.5.1. Type of machinery that would require evacuation during high flow periods.

6.7.7.5.2. How will the machinery be evacuated from the flood conveyance channel.

6.7.7.5.3. Where will the machinery be temporarily placed on-site.

6.7.7.5.4. Include site map indicating possible locations of temporary machinery placement.

6.7.8. **Contaminated Water -** List and describe what measures will be taken if contaminated water is found on site including:

6.7.8.1. Methods of isolating the contaminated water.

6.7.8.2. Methods of analyzing the contaminated water.

6.7.8.3. Where the water will be tested.

6.7.8.4. Methods of removing contaminated water from site.

6.7.8.5. How the water will be treated and disposed.

*********THIS COMPLETES THE DNR PERMIT SECTION*********

7.0 AGRICULTURAL IMPACTS

7.1 Provide information on any ongoing farming activities on the proposed turbine sites where construction activities will occur.

7.1.1. Identify current cropping patterns.

7.1.2. Identify the location of drainage tile or irrigation systems on the proposed sites.

7.1.3. Provide information on any farmland preservation agreements for the proposed sites.

7.1.4. Indicate whether any lands within the project boundary are enrolled in the Conservation Reserve Program (CRP)

8.0 AIRPORTS AND LANDING STRIPS

8.1 Public Airports

8.1.1. Identify all public airports inside the proposed project boundary.

8.1.2. Identify all public airports within 10 miles of the project boundary and list the distance to the nearest proposed turbine from the end of the runway.

8.1.2.1. Identify separately all public airports within:

8.1.2.1.1. 10,000 feet of the nearest turbine.

8.1.2.1.2. 20,000 feet of the nearest turbine.

8.1.3. Describe any mitigation measures pertaining to public airport impacts

8.2 Private Airports/Grass Landing Strips

8.2.1. Identify all private airports/landing strips within the proposed project boundary.

8.2.2. Identify all private airports/landing strips within two miles of the project boundary.

8.2.3. Provide the distance from each private airport/landing strip (ends of runway) to the nearest turbines.

8.2.4. Describe any mitigation measures pertaining to private airport or airstrip impacts

8.3 Commercial Aviation

8.3.1. Identify all commercial air services operating within the project boundaries (i.e. aerial applications for agricultural purposes, state programs for control of forest diseases and pests (i.e. Gypsy moth control).

8.3.2. Describe any potential impact to commercial aviation operations

8.3.3. Describe any mitigation measures pertaining to commercial aviation

8.4 Emergency Medical Services - Air Ambulance Service

8.4.1. Identify the provider/s of air ambulance services within the project area

8.4.2. Describe any planned mitigation (e.g. establishment of safe landing zones, etc).

8.5 Federal Aviation Administration – FAA

8.5.1. Provide copies of all correspondence with the FAA.

8.5.2. Provide copies of all FAA determinations of hazard/no hazard.

8.5.3. Provide a summary of the status of all FAA determinations with details on how any unresolved problems with aircraft safety are being addressed.

8.5.4. Provide a detailed description of any obstruction marking and lighting that will be required by the FAA.

8.6 Wisconsin Department of Transportation – Bureau of Aeronautics – High Structure Permits

8.6.1. Provide a list of all turbine sites requiring DOT high structure permits.
8.6.2. List the permit status and conditions for each turbine site requiring high structure permits.

9.0 EMF

9.1 Provide an estimate of the magnetic profile created by collector circuits. Estimates should be made using the following criteria:

9.1.1. Show a separate profile for the typical buried collector circuits. If some trenches would support more than one buried circuit, provide a separate estimate for each bundled configuration.
9.1.2. Show a separate profile for any overhead collector circuits.
9.1.3. Assume all turbines are working and project is producing at maximum capacity.
9.1.4. Show EMF profile at 0ft., 25ft., 50ft. and 100ft. from the centerline of each circuit type modeled.

10.0 LINE-OF-SIGHT AND BROADCAST COMMUNICATIONS

10.1 Microwave Communications:

10.1.1. Provide a line of site analysis showing that turbines, installed at all of the proposed (and alternate) wind turbine sites, will not interfere with microwave communications.
10.1.2. List potential impacts, mitigation measures used in design and post construction mitigation measures and plans.

10.2 Radio and Television interference:

10.2.1. Provide an analysis of the potential for television interference within and adjacent to (within 1 mile) of the project boundary.
10.2.2. Discuss how television interference will be eliminated or mitigated for the project.

10.3 NEXRAD interference:

10.3.1. Describe whether the proposed development is likely to interfere with any of the following Doppler weather radar installations:
10.3.1.1. National Weather service WSR-88D NEXRAD Doppler radar network installations within 150 miles (250 km) of the project boundary.
10.3.1.2. Doppler radar installations operated by broadcast television stations with Federal Communications Commission authorized service areas that completely or partially include the project area.

10.4 Other Communications Systems:

10.4.1. Provide an analysis or supportive data to predict whether or not any aspect of the proposed project will interfere with:

10.4.1.1. Cell phone communications

10.4.1.2. Radio broadcasts

10.4.1.3. Internet (WiFi)

10.4.1.4. Describe mitigation measures should interference occur during project operation

11.0 NOISE - Pre and Post construction noise studies are required for all turbine projects. Noise measurement studies must be approved by PSC staff.

11.1 Provide existing (ambient) noise measurements and projected noise impacts from the project using the PSC's Noise Measurement Protocol. The PSC Noise Measurement Protocol can be found on the PSC website at: http://psc.wi.gov/utilityinfo/electric/construction/PowerPlantRequirements.htm

11.2 Provide copies of any local noise ordinance

11.3 Provide turbine manufacturer's description of noise attenuating methods and materials used in the construction of proposed turbines.

11.4 Describe how noise complaints will be handled.

11.5 Discuss any mitigation measures that would be used to address noise complaints during the operation of the project.

12.0 SHADOW FLICKER

12.1 Provide an analysis showing the potential for shadow flicker in the area of a typical wind turbine site. Include contours for 100, 50, and 25 hours per year of potential shadow flicker. (The analysis should list the basic assumptions used and the methodology/software used for creating the shadow flicker analysis.)

12.2 Describe mitigation available to reduce shadow flicker

12.3 In the event of an inquiry or complaint by a resident in or near the project area, describe what modeling or other analysis would be used to evaluate the possibility of shadow flicker at the residence. If the likelihood were high that the resident would experience shadow flicker, describe what measures would be used to reduce the impacts on the resident.

13.0 LOCAL GOVERNMENT IMPACTS

13.1 Joint Development and Other Agreements

13.1.1. Provide a summary of major agreement items agreed upon in any JDA or other type of agreement including:
- 13.1.1.1. All services to be provided by the city, town, and/or county during construction and when the plant is in operation (e.g. water, fire, EMS, police, security measures, and traffic control).
- 13.1.1.2. Specifically, address community and facility readiness for incidents such as fires and critical turbine structure failures.

13.1.2. Provide a copy of all agreements with local communities (e.g. Joint Development Agreements (JDA))

13.2 Infrastructure and Service Improvements

13.2.1. Identify any local government infrastructure and facility improvements required (e.g. sewer, water lines, railroad, police, and fire).

13.2.2. Describe the effects of the proposed project on city, village, town and/or county budgets for these items.

13.2.3. For each site provide an estimate of any revenue to the local community (i.e. city, village, town, county) resulting from the project in terms of taxes, shared revenue, or payments in lieu of taxes.

13.2.4. Describe any other benefits to the community (e.g. employment, reduced production costs, goodwill gestures).

14.0 LANDOWNERS AFFECTED AND PUBLIC OUTREACH

14.1 Provide a separate alphabetized list (names and addresses) in Microsoft excel for each of the groups described below:
- 14.1.1. Property owners and residents within the project boundary and a separate list of property owners and residents from the project boundary out to a distance of 1.0 mile. It is strongly recommended that applicants consult with PSC staff in order to ensure that the format and coverage are appropriate considering the project type, surrounding land use, etc.
- 14.1.2. Public property, such as schools or other government land.
- 14.1.3. Clerks of cities, villages, townships, counties, and Regional Planning Commissions (RPC) directly affected.

14.2 List and describe all attempts made to communicate with and provide information to the public. Describe efforts to date and any planned public information activities. Provide copies of public outreach mailings.

14.3 Describe plans and schedules for maintaining communication with the public (e.g. public advisory board, open houses, suggestion boxes, and newsletters).

14.4 Identify all local media that have been informed about the project. The list of local media should include at least one print and one broadcast.